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RENAL LEIOMYOMA: A CASE REPORT

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We report a case of renal leiomyoma. A 46-year-old woman was found incidentally to have a solid and cystic renal mass on computerized tomography. The angiogram revealed no neovascularity. Nephrectomy was performed. Histologically, it was diagnosed as renal leiomyoma of vascular type. Although preoperative diagnosis of renal leiomyoma is difficult due to the various radiological findings, we should always consider this tumor in the differential diagnosis of renal tumors.

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Key words: Renal tumor, Leiomyoma

INTRODUCTION

Renal leiomyoma is an uncommon benign renal tumor. Since there are no characteristic radiological findings, preoperative diagnosis is difficult. Therefore, most patients have been treated by nephrectomy. We report a case of this tumor and discuss the problems in diagnosing this tumor.

CASE REPORT

A 46-year-old woman was referred for evaluation of a right renal mass, incidentally found on computerized tomography (CT) performed to examine cholelithiasis. The patient was asymptomatic with regard to the renal lesion. Physical examination findings were normal. The CT scan revealed a 4 cm solid and cystic mass in the mid portion of the right kidney (Fig. 1). The excretory urogram was unremarkable. The arteriogram revealed no neovascularity. The patient underwent nephrectomy, because malignancy could not be ruled out. Macroscopically, the surgical specimen was a well encapsulated mass, measuring 4×4×2.5 cm. The

cut surface revealed a well demarcated gray-tan hard mass with cysts (Fig. 2). Microscopically, the tumor was partially embedding and/or occupying the renal parenchyma and also oppressing neighbouring renal parenchyma. The cysts were composed of remaining and dilated renal tubuli in the tumor. The tumor consisted of irregularly interlacing bundles of smooth muscle cells, which were immunohistochemically positive for desmin (Fig. 3). No mitosis or significant pleomorphism was demonstrated in the tumor cells. The tumor cells showed occasional transition to irregularly proliferated smooth muscle cells of vascular walls (Fig. 3). Histological diagnosis was renal leiomyoma of vascular type.

DISCUSSION

Renal leiomyoma is an uncommon benign renal tumor, arising from the smooth muscle cells of the renal capsule, renal cortical vasculature, and renal pelvis¹⁾. Most of the tumors are small cortical

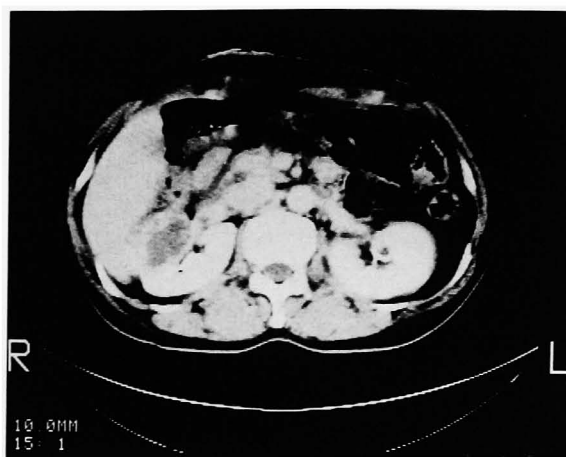


Fig. 1. Enhanced CT scan revealed a solid and cystic mass in the right kidney.

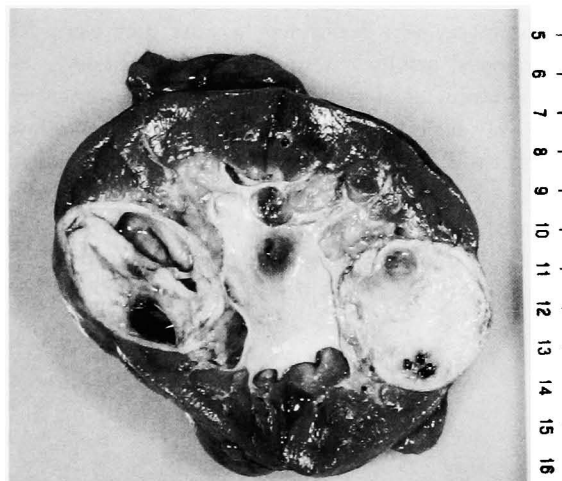


Fig. 2. The cut surface of the resected specimen reveals a well encapsulated solid and cystic tumor.

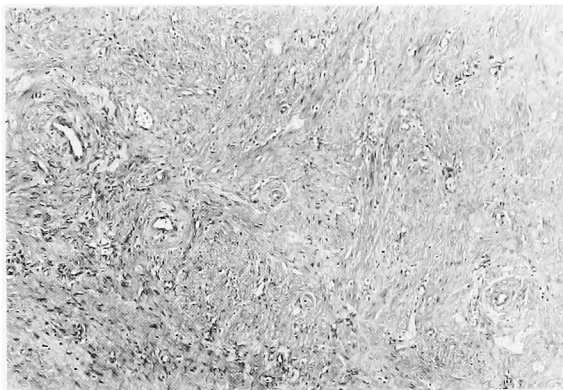


Fig. 3. Microscopic appearance of the tumor. The tumor is composed of smooth muscle cells with occasional transition to muscle cells of blood vessels. (H.E. stain, $\times 25$).

tumors, not causing any symptoms, but some grow large enough to cause symptoms and/or signs, such as flank pain, palpable mass and microscopic hematuria. They are found frequently in patients over 40 years of age and occur more frequently in women than men^{2,3)}.

These generally well encapsulated tumors, show no characteristic radiological findings, appearing as a purely solid, solid and cystic, and a completely cystic renal mass on CT scan⁴⁾. Most of them are avascular or hypovascular on the angiogram⁵⁾. However, a case of hypervascular renal leiomyoma, mimicking renal cell carcinoma has been reported⁶⁾. Preoperative diagnosis of renal leiomyoma is extremely difficult, and most patients have been treated by nephrectomy. However, Mohler et al. reported a case in which intraoperative exploration of a protruding renal mass led to a renal sparing surgery⁷⁾. In our case, the tumor presented as a hypovascular, well demarcated, solid and cystic mass on angiography and CT. These findings were almost consistent with renal leiomyoma. However, nephrectomy was performed because they were, by themselves, insufficient to exclude malignancy.

Sundaram et al. reported that tumors that were relatively acellular and had much collagen, had a low signal on T2-weighted pulse sequence MRI image (T2W)⁸⁾. In fact, renal medullary fibroma showed a low signal on T2W MRI image because it consisted of

abundant collagenous fibers and few cellular components⁹⁾. As renal leiomyomas also contain much connective tissue, they may appear dark on the T2W image, which is unusual for a renal cell carcinoma and a helpful finding to differentiate renal mesenchymal tumors from renal cell carcinomas. However, this finding is not diagnostic of benign mesenchymal tumors, because densely collagenous malignant fibrous histiocytoma also have this appearance⁸⁾.

In conclusion, when confronted with a well circumscribed, hypovascular renal mass, we should consider the possibility of renal leiomyoma and perform needle biopsy or renal exploration at surgery to avoid unnecessary nephrectomy.

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和文抄録

腎平滑筋腫の1例

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46歳の女性にみられた腎平滑筋腫の1例を報告する。CT 検査により偶然，充実性成分と嚢胞性成分とから成る腫瘤が右腎に存在するのを指摘されて来院した。血管造影では腫瘍血管の新生はなかった。腎摘を施行，病理組織学検査の結果，血管壁の平滑筋由来の腎平滑筋腫と診断された。腎平滑筋腫には放射線学的に特異的な所見がないため，術前診断が困難であ

り，多くの症例で腎摘が施行されている。しかし，術中に診断して腎摘を回避できた症例も報告されている。そのため，境界鮮明で血管成分の乏しい腎腫瘍を鑑別診断する場合，腎平滑筋腫の可能性も念頭におくことが重要である。

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